

REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Official Action dated 16 September 2005. Responsive to the rejections and objections made in the Official Action, independent Claims 1 and 13 have been carefully amended to further emphasize and clarify the combination of elements which the Applicant regards as the invention; and claims 2 – 12, 14 – 15, and 17 – 19 have been amended to improve the language thereof. Claim 16 has been cancelled without prejudice to incorporate the subject matter thereof into Claim 13.

In the Official Action, the Examiner objected to the specification because of found informalities, specifically the usage of the term “spectacle” in the title, disclosure and claims which is incorrect as the term -- spectacles -- has to be used. Accordingly, the title, Disclosure, and the Abstract of the Disclosure have been corrected to replace the term “spectacle” with the term -- spectacles --.

In the Official Action, Claims 1 – 19 were objected to because of found informalities. Accordingly, Claims 1 – 19 have been amended to replace the term “spectacle” with the term -- spectacles --. Also, Claim 1 has been amended to clarify that the display is a part of the projection module; and Claims 4, 5 and 6 have been amended in accordance with the Examiner’s recommendation by removing “first”, “second”, and “third” from the claim text related to focusing lens. It is believed, that by the amendments to the claims, as recommended by the

Examiner, the objection to the claims is to be lifted; and the same is respectfully requested.

In the Official Action, Claims 1 – 3, 5 and 12 were rejected under 35 U.S.C. § 102(b) as being anticipated by Spitzer, U.S. Patent 6,353,503 ('503 Patent); Claims 13, 14 and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Spitzer, U.S. Patent 6,023,372 ('372 Patent); Claims 4, 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Spitzer '503 Patent; Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the '503 Patent and further in view of Spitzer, U.S. Patent 5,886,822 ('822 Patent); Claims 9 – 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the '503 Patent and further in view of Stubbs et al., U.S. Patent 6,736,759; Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the '372 Patent; and Claims 17 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the '372 Patent and further in view of Stubbs et al.

Spitzer et al, further referred herein as '503 Patent, is directed to eyeglass display lens system employing off axis optical design. The display device includes a pair of lens 31 and a data projecting module 110 shown in Figures 10, and 11A – 11B. As shown in Figure 10, the module 110, containing an illuminator 51, display 50 and a relay lens set 52, is slideably and rotatably affixed to the temple piece 100 off the eyeglass frame. The rotation/sliding motion permits the user to aim the image source at an eyeglass lens is where the output

ray bundle is refracted by the first eyeglass lens surface 32 to impinge on reflector 25 for relay to the eye of a user. In another embodiment of the optical system of the '503 patent, an image source and optic assembly 110 are attached to a left temple 100. The attachment may be made by a sliding fixture 56 to which the optics assemblies mounted via a socket 55. Sliding fixture 56 permits lateral translation of assembly 110, while the ball 54 and socket 55 permit angular rotation, so as to allow the user to position the image in a convenient field of view. Images are relayed to the left eye via rays 120. The image source assembly 110 contains an image source 15 such as an active matrix liquid crystal display, and a backlight 51 for illumination. The image source 50 is mounted on a sliding base with an assembly 110.

Interconnections to the display and backlight are made through cable 57 that is terminated within cavity 58 of the assembly 110.

It is respectfully submitted, that the '503 Patent fails to disclose, suggest or render obvious the structure which the Applicant regards as the invention.

Specifically,

A. In the '503 Patent, in contrast to the present invention, the data projecting module 110 is slideably and rotatably attached to the temple piece 100 of the eyeglass frame as shown in Figures 10 and 11A – 11B.

While in the present invention, the data projecting module is positioned in the receptacle 12 which is formed in the frame 1 of the spectacles of the present

invention and which is concealed therein by the cover 15. Such an arrangement of the spectacles of the present invention provides for much more ergonomically viable design and convenience to a user of the spectacles of the present invention in comparison with the display system of the '503 Patent.

B. Further, in the '503 Patent, the module 110 is connected to a data generating circuit which is not shown in the '503 Patent, through the cable 57 shown in figures 10, and 11A – 11B and described in column 7, lines 19 – 21.

In the design of the present invention, in contrast to the '503 Patent, the communication between the modules is wireless, and therefore cables are not used in the design of the present invention. In the present invention, the data projecting module 2 and the data generating circuit (positioned on the circuit board 3) are located in the recess 12 formed in the frame 1 of the spectacles of the present invention in proximity each to the other and concealed therein by the cover 15.

Such an arrangement further improves the ergonomic and design features of the spectacles of the present invention and patentably differentiate the present invention from '503 patent where the signals are transmitted from a data generating circuit to the data projecting module 110 via the cable 57.

Claim 1 has been amended to include inter alia the following limitations:

“... a frame ... said frame having a recess formed therein ...”

“... a cover removably attachable to said frame to conceal contents of said recess ...”

“... said data generating circuit and said data projecting module being positioned in said recess formed in said frame.”

These features have not been found in the ‘503 Patent. Therefore, as Spitzer et al., ‘503 Patent, fails to disclose each and everyone of the claimed elements, it cannot anticipate the invention of the subject Patent Application, as now claimed. Accordingly, the allowance of Claim 1, as amended, is believed over the cited ‘503 patent; and the same is respectfully requested.

Spitzer et al. ‘372 patent, another reference cited by the Examiner for rejection of Claim 13, 14 and 16, is directed to a compact remountable display device for attachment to eyewear having a head borne frame to provide an image from an image display superposed on the ambient image. The display device includes a housing assembly which removably mounts to the head borne frame at a location outside of a user’s field of view. An electronic imaging assembly is supported by the housing assembly outside of the user’s field of view and in communication with circuitry within the housing assembly to produce an image. An optical element is provided comprising a transparent fixture supporting an eyepiece assembly in front of a user’s eye. The transparent fixture is located to receive the image from the electronic imaging assembly and relays the image to the eyepiece assembly, which directs the image to the user’s eye.

It is respectfully submitted that the ‘372 patent fails to suggest, disclose or render obvious the structure which the Applicant regards as the invention, as

claimed in Claim 13 and as shown in Figures 6 – 8 of the present Patent

Application. Specifically,

(A) a liquid crystal display of the '372 Patent which is a part of the imaging assembly 12, is located outside the user's field of view and is not included into the relay 26. Specifically, the display 40 is included into the housing 16 which is mounted on the temple 34 of the user's glasses 18 by clamping assembly 36, while the relay 26 with the mirror 28 and the focusing lens 32 is positioned in front of the user's eyeglass lens 24.

While in the present invention, the rack 4 includes the liquid crystal display (LCD) 23a mounted on the front plate 42 of the rack 4. The LCD is positioned "adjacent to the display region defined at said at least one lens." Therefore, in contrast to the '372 Patent the LCD 23a is located at the user's field of view.

(B) In the '372 patent, the relay 26 includes the mirror 28 which reflects the light received from LCD 40 and directs it to the lens 32 to transmit it to the user's eye.

While in the present invention, the focusing lens 25a is aligned with the LCD display 23a positioned in the rack 4 to focus the light received from the LCD display 23a into the user's eye. The system of the present invention, therefore, is simpler and does not require additional mirror surfaces on the rack 4 as it is the case in the '372 Patent.

Claim 13, as amended, recites (inter alia):

“... a Liquid Crystal Display (LCD) mounted on said front plate of the rack adjacent to the display region defined at said at least one lens ...”

This feature is completely missing in the ‘372 Patent. Therefore, as the ‘372 Patent fails to disclose each and everyone of the claimed elements, it cannot anticipate the invention of the subject Patent Application, as now claimed. Accordingly, the allowance of Claim 13 in view of the ‘372 Patent is believed; and the same is respectfully requested.

Spitzer, U.S. Patent 5,886,822, further referred herein as ‘822 Patent, is directed to image combining system for eyeglasses and face masks. This system combines a first image formed by a main lens with a second image provided by an electronic display, slide, or other image source. The image combining system includes one or more inserts such as a set of reflecting image combiners to redirect light on an optical pathway within the main lens to the user’s eye. The image combining system is highly compact, allowing the integration of a display system with eyeglasses or a face mask. When combined with the eyeglass, as shown in Figures 28A, 28B and 29, the main lens 300 comprises an embedded polarizing beam splitting cube 801 and an embedded prism 1100 which serve to reflect light from the active matrix liquid crystal display 320. The display is lit by backlight 1103 and the display and light are contained in the housing 1105. The display is connected electrically to electronic circuits, not shown in Figures 28A or 28B.

The display 320 is mounted optically to spacer 1101 and is positioned so that the polarization of light emitted by the display is in favorable direction for reflection by cube 801 toward the user's eye. Lens 370 reduces the vergence of rays from the cube 801. Lens 410 precorrects light from the ambience scene so that in combination lens 370 and 410 transmit light relatively free of vergence change.

Complete concealment of the display system within the eyeglasses frame 830 is possible by repackaging the backlight 1103 and display 320 so as to be contained within a housing internal to the eyeglass frame. Figure 29 illustrates a method of packaging a flat backlight 1110, display 320 and prism 1111 within the temple 1112 of eyeglasses to conceal the display. Additionally, the lens 370 and 410 can be embedded within the main lens 300 as shown in Figure 29.

It is respectfully submitted, that, in contrast to the present invention, as shown in Figures 28B and 29 of the '822 Patent, and as described in column 18, lines 45 – 61 thereof, the LCD 320 is positioned either within the temple 1112 of eyeglasses or in the housing 1105 which, as shown in Figure 28B is spaced from the frame 830 of the eyeglasses. In contrast to the present invention, the '822 Patent fails to teach a recess formed in the frame 830 for accommodating the data projecting module.

While in the present invention, the LCD which is included in the data projecting module 2 is concealed in the recess 12 which is formed in the frame 1 but not in the temple of the spectacles of the present invention. The elastic belt 16

which serves for securing the spectacles of the present invention to the user's head, cannot incorporate a data projecting module because it is just an elastic member lacking a needed structural rigidity necessary for housing purposes. The recess 12 formed in the frame of the spectacles of the present invention is specifically formed for receiving data projecting module to therein.

Further, the '822 Patent fails to teach that a data generating circuit is received in a recess formed in the frame of the eyeglasses. The electronic circuits controlling the display 320 is not shown or described in the '822 Patent.

While in the present invention, the data generating circuit which is positioned on the circuit board 3 is received in the recess 12 in close proximity to the data projecting module 2. The cover 15 covers the recess 12 to conceal both the data projecting module 2 and the data generating circuit in the recess 12. This feature is missing in the '822 Patent.

Stubbs et al. another reference cited by the Examiner, is directed to exercise monitoring system which includes an electronic positioning device, a physiological monitor, and a display unit configured for displaying data provided by the electronic positioning device and the physiological monitor. As presented in Figure 19 and described in column 21, lines 42 – 67, the display unit 107 comprises glasses which include a display assembly 153 which displays data onto eyeglass lens 152. A cable (or wire) 154 connects the glasses to processor – transmitter module 60. The display screen is positioned in front of the user's

eyeglasses (or is otherwise positioned in front of the user's face) so that the subject may view data and other information provided on the display screen while still being able to see through the glasses.

It is respectfully submitted that the Stubbs et al. patent merely presents eyeglasses with capability to display data in front of the user's eyes. However, in contrast to the present invention, Stubbs et al. fails to teach a wireless communication between the electronics (data generating circuit) 60 and the display 152. It is clear that data are sent to the display through the cable 154.

While in the present invention, the transmission between the wireless signal receiving module 3 and data generating circuit is wireless and does not require any cables (or wires) as is presented in Figure 19 of Stubbs et al.

Further, Stubbs et al. fails to suggest that wireless signal receiving module is received in a recess formed in the frame of the eyeglasses; or a specific arrangement where the data generating circuit as well as the data projecting module are concealed in a recess formed in the frame of the eyeglasses.

Nor, Stubbs et al. teaches a LCD formed on a rack pivotally secured to the eyeglasses and focusing lens aligned with the LCD to focus the light emitted by the LCD into the user's eye.

It is respectfully submitted, that none of the references cited by the Examiner disclose, suggest or render obvious spectacles having a recess formed in the frame, and a cover removably attachable to said frame to conceal contents of

said recess, and wherein the data generating circuit and the data projecting module are positioned in the recess formed in the frame. These features are clearly emphasized in Claim 1, as amended. As Claim 1 now directs itself to the spectacles having (inter alia) a frame, wherein

“... said frame having a recess formed therein ...”

“... a cover removably attachable to said frame to conceal contents of said recess ...”, and

“... said data generating circuit and said data projecting module being positioned in said recess formed in said frame ...”, it is believed that Claim 1 is allowable over the cited references taken singly or in combination; and such action is respectfully requested.

None of the references cited by the Examiner taken singly or in combination thereof suggest, disclose or render obvious the spectacles in which a Liquid Crystal Display is mounted on a front plate of a rack pivotally mounted to the spectacles. Claim 13, as amended, clearly directs itself to spectacles having (inter alia)

“... a rack pivotally mounted on the spectacles, said rack having a front plate and rear plate ...” and

“a liquid crystal display (LCD) mounted on said front plate of the rack adjacent to the display region defined at said at least one lens, said LCD receiving and displaying the data generated by the data generating circuit ...”.

Therefore, the allowance of Claim 13 over the cited prior art, taken singly or in combination, is believed; and the same is respectfully urged.

Claims 2 – 12, directly or indirectly dependent upon Claim 1, and Claims 14, 15, and 17 – 19, directly or indirectly dependent on Claim 13, are believed each to add further limitations that are patentably distinct in addition to being dependent upon what is now believed to be a patentable base claim, and therefore, allowable for at least the same reasons.

For all of the foregoing reasons, it is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
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